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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/069,412	02/25/2002	Keun-Hoon Yoo	12652-006US1	3263

26161 7590 05/07/2003

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EXAMINER

MULLIS, JEFFREY C

ART UNIT PAPER NUMBER

1711

DATE MAILED: 05/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/069,412

Applicant(s)

YOO ET AL.

Examiner

Jeffrey C. Mullis

Art Unit

1711

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 June 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

Art Unit 1711

Claim 8 lacks antecedent basis in the specification given that the specification does not recite that the vinyl compound of bi may include styrene. Correction is required.

35 U.S.C. § 112, first paragraph, requires the specification to be written in "full, clear, concise, and exact terms." The specification is replete with terms which are not clear, concise and exact. The specification should be revised carefully in order to comply with 35 U.S.C. § 112, first paragraph. Examples of some unclear, inexact or verbose terms used in the specification are: "heat-resistant", (sic), heat resistance as set out at page 1 lines 26-27 and elsewhere; "adding in a lump" as set out on page 4 lines 21-22 and numerous other places; "method in a lump" as set out at page 6 line 10 and possibly elsewhere; "welding process of the rubber latex" as set out at page 10 lines 30-31. It is noted that applicants' claims also contain grammatical errors and spelling errors and applicants should also review their claims as well as their specification to eliminate such errors. Examples of spelling and grammatical errors in the claims are "lstyrene" in claim 4; "diisoprpyl" in claim 16 and "having heat-resistant" (sic), it is believed that heat resistance is intended and "a preparing copolymer" as is recited in claim 1 (sic), it is believed that "preparing a copolymer" is intended. Claim 5 also contains the ungrammatical "unsaturated monomer of ethylene-based" while step 12 contains

Art Unit 1711

the ungrammatical "wherein the conjugated diene rubber latex of a)i) step prepared by comprising the steps of" (sic). The last two lines of claim 17 are ungrammatical while claim 16 contains the misspelling "diisoprpyl". Correction is suggested. Page 2 lines 8-10 contains the phrase "a gas occurs". This phrase makes no sense in the context therein. Correction is requested.

Claims 1-17 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention.

The term "heat resistant" is relative and subjective and therefore unclear.

Since particle sizes exist as a distribution, it is not clear what type of particle size is being recited in claim 2 since particle sizes for a particular sample vary depending on the type of particle size recited such as weight average particle size, number average particle size, etc.

It is not clear what is intended by the term "graft rate" since this word can be interpreted as amount of grafting as a percentage of the amount of substrate or can be interpreted as the total amount of graft phase in comparison to the total amount of graft plus substrate or may be interpreted as the amount of grafted phase based on the total amount of composition i.e. the graft phase plus grafted phase plus thermoplastic phase etc.

Art Unit 1711

The term "antiadditive" and the term "in a lump" as recited in at least claims 11, 12 and 14 are not art recognized in the context of the claim and therefore unclear.

It is not clear what is intended by the phrase "by adding" in at least claim 13 given that claim 13 does not recite to what material or process the "by adding" takes place. Since the term "by adding" makes no sense except in the context in which addition takes place to something, it is not clear what is intended in claim 13 or elsewhere where this phrase appears.

Claim 11 is unclear since it recites the term "ion exchange water" which is not art recognized. Claim 11 is also unclear since it contains the phrase "by increasing the particle". Since it is not indicated what feature of increasing the particle is intended, it is unclear what this phrase means.

The "molecular weight controlling agent" of claim 12 and claim 13 as well as claim 17 lacks antecedent basis in claim 1 from which these claims depend. Therefore this phrase renders these claims unclear.

The term "polymerization initiator" as recited in at least claim 13 lacks antecedent basis in claim 1 from which it depends and therefore the phrase "polymerization initiator" renders the claims unclear.

Art Unit 1711

The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-17 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Padwa et al. (USP 5,910,538).

Padwa et al. disclose a molding composition containing a blend of ABS and a "compatibilizing agent". The ABS refers to an emulsion produced material at column 8 lines 1-4 while the "compatibilizer" refers to a polymer produced solution polymerization, embraced by applicants' mass polymerization produced heat resistant copolymer. Note column 8 lines 28-51 in this regard. Note also that the compatibilizer is produced in

Art Unit 1711

the presence of thioglycolate chain transfer agent. Since both patentees' and applicants' copolymer are prepared by mass polymerization using acrylonitrile and styrene, it would reasonably appear that the characteristic of heat resistance is inherent in Padwa's copolymer and in any case Padwa's compatibilizing copolymer would certainly be heat resistant compared to a copolymer having non-heat resistant units in it or less heat resistant units in it than that of Padwa.

When the reference discloses all the limitations of a claim except a property or function, and the Examiner cannot determine whether or not the reference inherently possesses properties which anticipate or render obvious the claimed invention, basis exists for shifting the burden of proof to applicant. Note In re Fitzgerald et al. 619 F. 2d 67, 70, 205 USPQ 594, 596, (CCPA 1980). See MPEP § 2112-2112.02.

Claims 1-11 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Leitz et al. (USP 5,605,963).

Leitz et al. disclose a composition containing a blend of ABS polymers which is produced by emulsion polymerization referred to as polymer "A" and embraced by applicants' graft polymer "a" while patentees' polymer "B" would appear to be embraced by applicants' heat resistant polymer given that it contains styrene and acrylonitrile. Note the Abstract in this

Art Unit 1711

regard. While patentees' component "B" also contains a rubber such as polybutadiene, such is not excluded by applicants' claims. Furthermore, applicants' component "b" also embraces patentees' component "C". Note that patentees' component C is preferably produced by solution polymerization or mass polymerization at column 2 lines 55-67.

When the reference discloses all the limitations of a claim except a property or function, and the Examiner cannot determine whether or not the reference inherently possesses properties which anticipate or render obvious the claimed invention, basis exists for shifting the burden of proof to applicant. Note In re Fitzgerald et al. 619 F. 2d 67, 70, 205 USPQ 594, 596, (CCPA 1980). See MPEP § 2112-2112.02.

The patents indicated in the "Y category" do not appear at present to teach or suggest applicants' combination of an emulsion polymerized polymer and a mass polymerized polymer.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey Mullis whose telephone number is (703) 308-2820. The examiner can normally be reached on Monday-Friday from 9:30 to 6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck, can be reached on (703) 308-2462. The fax phone number for this Group is before final (703) 872-9310 and after final (703) 8729311.



Serial No. 10/069,412

-8-

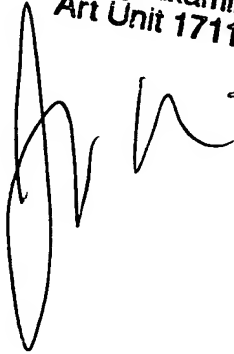
Art Unit 1711

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-2351.

J. Mullis:cdc

May 2, 2003

Jeffrey Mullis  
Primary Examiner  
Art Unit 1711

A handwritten signature in black ink, appearing to be 'J. Mullis', written over the printed name and title.